

**CLAIMS**

1. Apparatus for providing a user with an indication of the content of a text, the apparatus comprising:

- 5       receiving means for receiving text data:  
      topic determining means for determining from the text data at least one topic;  
      topic context data identifying means for identifying in the text data context data associated with the at least one topic determined by the topic determining means;  
10       topic representation data providing means arranged to provide topic representation data defining a graphical representation of the at least one topic in which are distributed visual indicia representing at least some of the context data with the distribution of the visual indicia indicating the positions within the text data of the corresponding context data; and  
15       supplying means for supplying the topic representation data for enabling display of the at least one topic representation to a user.  
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2. Apparatus according to claim 1, further comprising significance determining means for determining the relative significance of context data associated with the at least one topic, wherein the topic representation data providing means is arranged to provide a graphical representation that provides a visual indication of the relative significance of occurrence of the context data.  
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3. Apparatus for providing a user with an indication of the content of a text, the apparatus comprising:

a part-of-speech associater for associating words in text data with part-of-speech identifiers to produce part-of-speech identified text data;

a topic determiner for determining from the part-of-speech-identified text data at least one topic that occurs in the text data;

a topic context data identifier for identifying in the text data context data associated with the at least one topic determined by the topic determiner;

a topic representation data provider arranged to provide topic representation data defining a graphical representation of the topic in which are distributed visual indicia representing at least some of the context data with the distribution of the visual indicia represent the relative positions within the text data of the corresponding context data; and

a display controller for causing a display to display the topic representation.

4. Apparatus according to claim 2, wherein the topic representation data providing means is arranged to provide topic representation data comprising data that determines the appearance of the visual indicia in accordance with the relative significance of the context data.

5. Apparatus according to claim 2, wherein the significance determining means is arranged to determine

the significance of context data in accordance with at least one of frequency of occurrence in the text data, its position of occurrence in the text data and its appearance within the text data.

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6. Apparatus according to claim 1, wherein the topic representation data providing means is arranged to provide topic representation data that defines the graphical representation as a line along which the visual indicia are distributed.

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7. Apparatus according to claim 1, wherein the topic representation data providing means is arranged to provide topic representation data wherein the relative positions of the visual indicia represent the relative positions of the context data in the text data.

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8. Apparatus according to claim 1, wherein the topic representation data providing means is arranged to provide topic representation data wherein the scale of distribution of the visual indicia is non-linear and is relatively enlarged in at least one of the following situations: where the visual indicia are close together; and where the visual indicia are more significant.

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9. Apparatus according to claim 1, further comprising:  
selection means for enabling a user to select a visual indicia; and

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highlighting means for causing any other visual indicia associated with the same context data as the

selected visual indicia to be highlighted.

10. Apparatus according to claim 1, further comprising  
modifying means for modifying the visual indicia of a  
topic representation.

11. Apparatus according to claim 1, wherein: the topic  
determining means is arranged to determine a number of  
different topics from the text data; the topic context  
data identifying means is arranged to identify in the  
text data respective context data for each topic; and the  
topic representation data providing means is arranged to  
provide topic representation data defining a respective  
graphical representation for each topic.

12. Apparatus according to claim 1, wherein the topic  
determining means is arranged to determine from the text  
data at least one of the number of occurrences of the  
same lexical item and the number of occurrences of  
lexical items sharing a relationship and defining a  
lexical item set to identify the topic or topics in  
accordance with the highest such occurrences.

13. Apparatus according to claim 1, wherein the topic  
determining means is arranged to determine from the text  
data at least one of the number of occurrences of the  
same noun and the number of occurrences of nouns sharing  
a relationship and defining a noun set to identify the  
topic or topics in accordance with the highest such  
occurrences.

14. Apparatus according to claim 1, wherein the topic determining means is arranged to identify lexical chains in the phrase-identified text data and to identify as the topic or topics the lexical chain or chains having the highest number of components.

15. Apparatus according to claim 1, further comprising summarising means for generating a summary of the text and summary display means for causing the display to display the summary.

16. A method of providing a user with an indication of the content of a text, the method comprising processor means carrying out the steps of:

receiving text data:  
determining from the text data at least one topic;  
identifying in the text data context data associated with the at least one determined topic;  
providing topic representation data defining a graphical representation of the at least one topic in which are distributed visual indicia representing at least some of the context data with the distribution of the visual indicia indicating the positions within the text data of the corresponding context data; and  
supplying the topic representation data for enabling the at least one topic representation to be displayed to a user.

17. A method according to claim 16, further comprising the processor means determining the relative significance

of context data associated with the at least one topic and providing a graphical representation that provides a visual indication of the relative significance of occurrence of the context data.

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18. A method of providing a user with an indication of the content of a text, the method comprising processor means carrying out the steps of:

10 associating words in text data with part-of-speech identifiers to produce part-of-speech identified text data;

determining from the part-of-speech-identified text data at least one topic that occurs in the text;

15 identifying in the text data context data associated with the at least one determined topic;

providing topic representation data defining a graphical representation of the topic in which are distributed visual indicia representing at least some of the context data with the distribution of the visual  
20 indicia represent the relative positions within the text data of the corresponding context data; and

causing a display to display the topic representation.

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19. A method according to claim 17, wherein the topic representation data comprises data that determines the appearance of the visual indicia in accordance with the relative significance of the context data.

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20. A method according to claim 17, wherein the

significance of context data is determined in accordance with at least one of frequency of occurrence in the text data, its position of occurrence in the text and its appearance within the text.

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21. A method according to claim 16, wherein the topic representation data defines the graphical representation as a line along which the visual indicia are distributed with the relative positions of the visual indicia along the line representing the relative positions of the context of the context data in the text.

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22. A method according to claim 16, wherein the topic representation data represents the relative positions of the context data in the text by the relative positions of the visual indicia.

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23. A method according to claim 16, wherein the topic representation data is provided so that the scale of distribution of the visual indicia is non-linear and is relatively enlarged in at least one of the following situations: where the visual indicia are close together; and where the visual indicia are more significant.

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24. A method according to claim 16, further comprising enabling a user to select a visual indicia and highlighting any other visual indicia associated with the same context data as the selected visual indicia.

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25. A method according to claim 16, further comprising

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modifying the visual indicia of a topic representation in response to at least one of user input and the topic representation data.

5        26. A method according to claim 16, wherein: a number of different topics from the text data are determined; respective context data is identified in the text data for each topic; and the topic representation data is provided defining a respective graphical representation  
10        for each topic.

27. A method according to claim 16, further comprising the processor means determining from the text data at least one of the number of occurrences of the same  
15        lexical item and the number of occurrences of lexical items sharing a relationship and defining a lexical item set, to identify the topic or topics in accordance with the highest such occurrences.

20        28. Apparatus according to claim 16, further comprising the processor means determining from the text data at least one of the number of occurrences of the same noun and the number of occurrences of nouns sharing a relationship and defining a noun set, to identify the  
25        topic or topics in accordance with the highest such occurrences.

29. A method according to claim 16, which comprises the processor means identifying lexical chains in the  
30        phrase-identified text data and identifying as the topic



or topics the lexical chain or chains having the highest number of components.

30. A method according to claim 16, further comprising  
5 generating a summary of the text and causing the display to display the summary.

31. A user interface comprising:  
topic representation display means arranged to display  
10 in a display area a graphical representation of a topic in which are distributed visual indicia representing context data associated with that topic and a cursor;  
user input receiving means for receiving user input from a user input device and for moving the cursor in the  
15 display area in accordance with the user input; and  
modifying means for modifying the graphical topic representation when the cursor is placed over a visual indicia.

20 32. A user interface comprising:  
display means arranged to display a display region having first and second display areas adjacent to one another and configured to display in the first display area at least a portion of a text and to display in the second display area  
25 a graphical representation of a topic occurring in the text in which graphical representation are distributed visual indicia representing context data associated with that topic, the display means also being arranged to display a cursor in the display region and a scroll bar associated with the first  
30 display area;  
user input means for receiving user input from a user input device and for moving the cursor in the display region in accordance with the user input; and

scrolling means for scrolling both the text in the first display area and the topic representation in the second display area when user input is received by the user input means that causes the cursor to move to input a scroll instruction.

33. Program instruction for programming processor means to carry out a method in accordance with claim 16.

10 34. A storage medium comprising program instructions in accordance with claim 33.

35. A signal comprising program instructions in accordance with claim 33.

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36. Apparatus for providing a user with an indication of the content of a text, the apparatus comprising:

a receiver for receiving text data;

a topic determiner for determining from the text data  
20 at least one topic;

a topic context data identifier for identifying in the text data context data associated with the at least one topic determined by the topic determiner;

a topic representation data provider arranged to  
25 provide topic representation data defining a graphical representation of the at least one topic in which are distributed visual indicia representing at least some of the context data with the distribution of the visual indicia indicating the positions within the text data of the  
30 corresponding context data; and

a supplier for supplying the topic representation data for enabling display of the at least one topic representation to a user.